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IS 5904 (1978): Steel chaplets for use in ferrous foundries
[MTD 14: Foundry]



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IS : 5904 - 1978

Indian Standard

SPECIFICATION FOR STEEL CHAPLETS FOR
USE IN FERROUS FOUNDRIES

(*First Revision*)

UDC 621.744.527.3 [669.14]



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INDIAN STANDARDS INSTITUTION

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Rs 12.00 Gr. 7

May 1979

*Indian Standard*SPECIFICATION FOR STEEL CHAPLETS FOR
USE IN FERROUS FOUNDRIES*(First Revision)*

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(Continued from page 1)

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Indian Standard

SPECIFICATION FOR STEEL CHAPLETS FOR USE IN FERROUS FOUNDRIES

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 14 July 1978, after the draft finalized by the Foundry Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first issued in 1970. On the basis of experience gained during these years it has been decided to revise this standard incorporating different shapes of single column chaplets to avoid mix up at the shop floor. The requirements for pipe column chaplets for precision automobile castings have also been added.

0.3 This standard has been prepared to assist foundries in the purchase of chaplets.

0.4 This standard keeps in view the manufacturing and trade practices followed in the country in this field. In preparing this standard assistance has also been derived from the following:

DIN 1512 U Specification for chaplets tinning foundry practice.
Deutscher Normenausschuss, DNA (West Germany).

GOST 9062-1954 Specification for chaplets for iron and steel castings. Kimitet Standartov, Mer i Izmeritel'nyh Priborov pri Sovete Ministrov S.S.S.R. (USSR).

0.5 This standard contains clauses **4.1.1**, **4.1.2**, **6.2.2** and **6.4** which call for agreement between the purchaser and the manufacturer.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (revised).

1. SCOPE

1.1 This standard covers the requirements for steel chaplets for use in ferrous foundries.

2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of chaplets, shall be as laid down in IS : 1387-1967*.

3. MATERIAL

3.1 Stamped chaplets, the supporting heads of assembled chaplets and also rectangular columns shall be made of low carbon cold-rolled steel strips corresponding to grade '0' of IS : 513-1973†.

3.2 Chaplets with round columns of diameter up to 12.5 mm shall be manufactured from soft steel wire conforming to IS : 280-1978‡ and those of diameter above 12.5 mm from hot-rolled round bars conforming to IS : 226-1975§.

4. SHAPES, SIZES AND TOLERANCES

4.1 The shapes and sizes of chaplets shall be as given in Tables 1 to 16.

4.1.1 Chaplets of dimensions other than those specified in Tables 1 to 16 may be supplied by agreement between the purchaser and the manufacturer.

4.1.2 For special applications, tolerances closer than those specified in the tables may be agreed to between the purchaser and the manufacturer.

4.1.3 Shapes of heads of single column chaplets shall be as follows:

| <i>Nominal Size</i> | <i>Shapes of Head</i> |
|---------------------|---|
| mm | |
| 5 | Both heads circular |
| 6 | One head circular, other head square |
| 7 | One head circular, other head hexagonal |
| 8 | Both heads circular |

For larger sizes the same sequence for head shape shall follow at an interval of 1 mm.

4.2 Tolerances for thickness/dia for sheet, wires and rods shall be as given in IS : 513-1973†, IS : 280-1978‡ and IS : 226-1975§ respectively.

*General requirements for the supply of metallurgical materials (*first revision*).

†Specification for cold-rolled carbon steel sheets (*second revision*).

‡Specification for mild steel wire for general engineering purposes (*third revision*).

§Specification for structural steel (standard quality) (*fourth revision*).

4.2.1 Dimensions for which tolerances are not specified, they are not critical. However, they may be agreed upon the time of inquiry and order, if required.

5. DESIGNATION

5.1 The chaplets shall be designated by the word 'Chaplet' followed by type, variant and major dimension in the same order with a dash between each number and further followed by number of this standard.

Example:

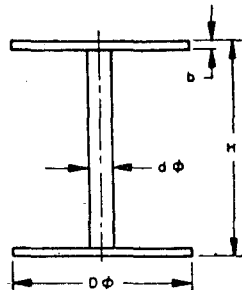
Stem chaplet, type 6, variant 2 with a height 125 mm will be designated as:

Chaplet VI — 2 — 125, IS : 5904

**TABLE 1A DIMENSIONS OF SINGLE COLUMN CHAPLETS FOR
PRECISION AUTOMOBILE CASTINGS (THIN WALLED),
TYPE 1, VARIANT 1A**

(*Clauses 4.1 and 4.1.1*)

All dimensions in millimetres.

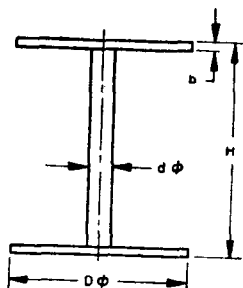


| <i>H</i> | | <i>D</i> | | <i>d</i> | | <i>b</i> | |
|--------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|
| Nomi- nal | Tole- rance | Nomi- nal | Tole- rance | Nomi- nal | Tole- rance | Nomi- nal | Tole- rance |
| 5.18 | ± 0.10 | 10 | -0.20 | 1.6 | ± 0.1 | 0.5 | ± 0.06 |

**TABLE 1B DIMENSIONS OF SINGLE COLUMN
CHAPLETS, TYPE 1, VARIANT 1B**

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.

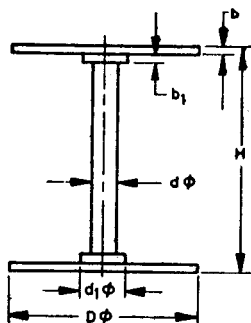


| <i>H</i> | | <i>D</i> | | <i>d</i> | <i>b</i> |
|----------|----------------|----------|-----------|----------|----------|
| Nominal | Tolerance | Nominal | Tolerance | | |
| 5 | +0.20 -0.10 | 8.0 | -0.20 | 1.6 | 0.5 |
| 6 | | | | | |
| 7 | | | | | |
| 8 | +0.30 -0.10 | 12.0 | | 2.0 | 0.80 |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | +0.50 -0.15 | 15.0 | | 2.65 | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | 3.0 | |
| 16 | | | | | |
| 17 | | | | | |
| 18 | | | | 18.0 | 3.55 |

**TABLE 2 DIMENSIONS OF SINGLE COLUMN ROUND HEADED CHAPLETS
WITH COLLARS, TYPE 1, VARIANT 2**

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.

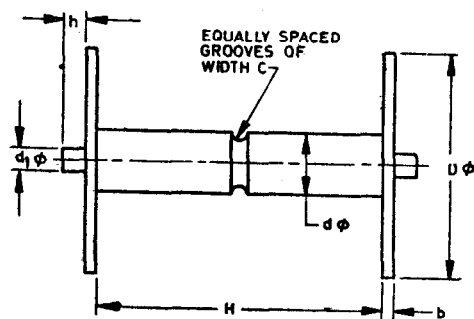


| <i>H</i> | | <i>D</i> | | <i>d</i> | <i>d</i> ₁ | <i>b</i> | <i>b</i> ₁ |
|----------|----------------|----------|-----------|----------|-----------------------|----------|-----------------------|
| Nominal | Tolerance | Nominal | Tolerance | | | | |
| 5 | +0.20 −0.10 | 8.0 | −0.20 | 3 | 4.5 | 0.80 | 0.80 |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | +0.30 −0.10 | 12.0 | | | | | |
| 10 | | | | | | | |
| 11 | | 14.0 | | | | | |
| 12 | | | | | | | |
| 13 | +0.50 −0.15 | 16.0 | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |
| 16 | | | | | | | |
| 18 | +0.60 −0.15 | 18.0 | | 3.55 | 6 | 1.0 | 1.3 |
| 20 | | | | | | | |
| 22 | | | | | | | |
| 24 | | 25.0 | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

TABLE 3 DIMENSIONS OF SINGLE COLUMN ROUND HEADED CHAPLETS FOR SUPPORTING HEAVY CORES, TYPE 1, VARIANT 3

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



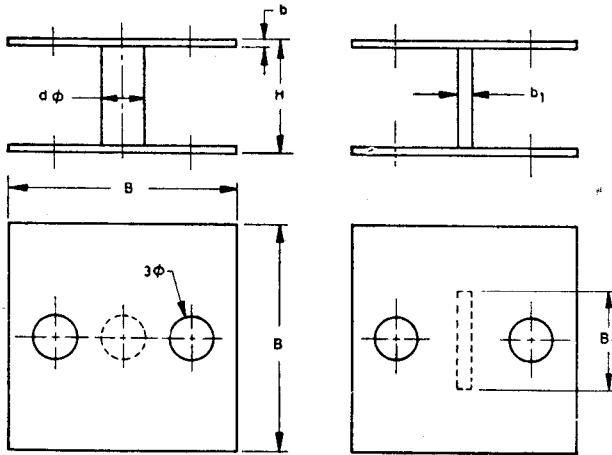
N=NUMBER OF GROOVES

| <i>H</i> | | <i>D</i> | <i>d</i> | <i>b</i> | <i>d</i> ₁ | <i>c</i> | <i>h</i> | <i>N</i> | | | | | | | | | |
|----------|---------------|----------|----------|----------|-----------------------|----------|----------|----------|---|---|------|-----|-----|---|---|---|---|
| Nominal | Tolerance | | | | | | | | | | | | | | | | |
| 16 | +0.6 −0.15 | 20.0 | 6.0 | 1.6 | 3 | 2 | 3 | 1 | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | |
| 31.5 | | | | | | | | | | | | | | | | | |
| 35 | 25.0 | 8.0 | 1.6 | | | | | 3 | 2 | 3 | 2 | | | | | | |
| 38 | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | |
| 44.5 | | | | | | | | | | | | | | | | | |
| 47.5 | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | | | |
| 54 | +0.8 −0.2 | | | | | | | | | | 35.0 | 8.0 | 1.6 | 3 | 2 | 3 | 3 |
| 57 | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | |
| 63.5 | | | | | | | | | | | | | | | | | |
| 66.5 | | | | | | | | | | | | | | | | | |
| 69.5 | | | | | | | | | | | | | | | | | |
| 75 | 40.0 | | | 8.0 | 1.6 | 3 | 2 | | | | 3 | | | | | | 3 |

**TABLE 4 DIMENSIONS OF SINGLE COLUMN CHAPLETS,
TYPE 2, VARIANTS 1 AND 2**

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



VARIANT 1
With Round Column

VARIANT 2
With Rectangular Column

| <i>H</i> | | <i>B</i> | <i>b</i> | <i>d</i> | | <i>B</i> ₁ × <i>b</i> ₁ |
|----------|----------------|----------|----------|-------------------|--------------------|---|
| Nominal | Tolerance | | | For Iron Castings | For Steel Castings | For Iron Castings |
| 5 | +0.20 −0.10 | 16 | 0.5 | 3 | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | +0.30 −0.10 | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| | | | | | | 7 × 1.0 |

(Continued)

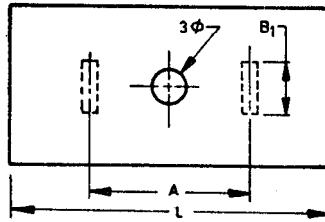
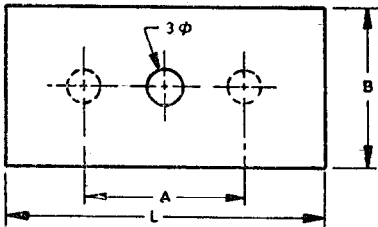
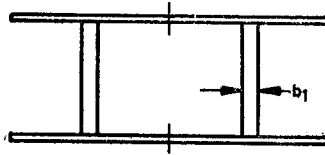
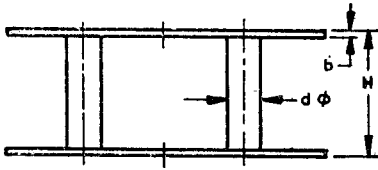
**TABLE 4 DIMENSIONS OF SINGLE COLUMN CHAPLETS,
TYPE 2, VARIANTS 1 AND 2 — Contd**

All dimensions in millimetres.

| <i>H</i> | | <i>B</i> | <i>b</i> | <i>d</i> | | <i>B</i> ₁ × <i>b</i> ₁ |
|----------|----------------|----------|----------|-------------------|--------------------|---|
| Nominal | Tolerance | | | For Iron Castings | For Steel Castings | For Iron Castings |
| 12 | +0.50 -0.15 | 22 | 0.80 | 4 | | 9 × 1.5 |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 18 | | | | | | |
| 20 | +0.60 -0.15 | 32 | 1.0 | 6 | | 12 × 2.5 |
| 22 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | | | | | | |
| 28 | +0.80 -0.20 | 40 | 1.5 | 8 | | 13 × 4 |
| 30 | | | | | | |
| 32 | | | | | | |
| 35 | | | | | | |
| 38 | | | | | | |
| 40 | +1.0 -0.25 | 46 | 2.0 | 10 | 12 | — |
| 45 | | | | | | |
| 50 | | | | | | |
| 55 | | | | | | |
| 60 | | | | | | |
| 65 | | 50 | 2.5 | 12 | 14 | — |
| 70 | | | | | | |
| 75 | | | | | | |
| 80 | | | | | | |
| 85 | | | | | | |
| 90 | | | | | | |
| 95 | | | | | | |
| 100 | | | | | | |

**TABLE 5 DIMENSIONS OF TWO COLUMN CHAPLETS, TYPE 3,
VARIANTS 1 AND 2**(*Clauses 4.1 and 4.1.1*)

All dimensions in millimetres.

**VARIANT 1**With Round Columns and
Rectangular Heads**VARIANT 2**With Rectangular Columns and
Rectangular Heads

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>A</i> | <i>b</i> | <i>a</i> | | <i>B</i> ₁ × <i>b</i> ₁ |
|----------|----------------|----------|----------|----------|----------|-------------------|--------------------|---|
| Nominal | Tolerance | | | | | For Iron Castings | For Steel Castings | For Iron Castings |
| 12 | +0.50 -0.15 | 44 | 22 | 22 | 0.80 | 4 | | 9 × 1.5 |
| 14 | | | | | | | | |
| 15 | | | | | | | | |
| 16 | | | | | | | | |
| 18 | | | | | | | | |
| 20 | +0.60 -0.15 | 64 | 32 | 32 | 1.0 | 6 | | 12 × 2.5 |
| 22 | | | | | | | | |
| 24 | | | | | | | | |

(*Continued*)

TABLE 5 DIMENSIONS OF TWO COLUMN CHAPLETS, TYPE 3,
VARIANTS 1 AND 2 — *Contd*

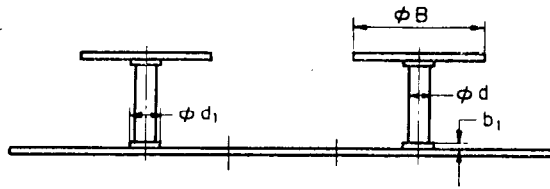
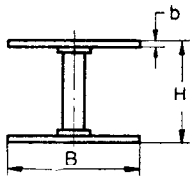
All dimensions in millimetres.

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>A</i> | <i>b</i> | <i>d</i> | | <i>B</i> ₁ × <i>b</i> ₁ |
|----------|----------------|----------|----------|----------|----------|-------------------|--------------------|---|
| Nominal | Tolerance | | | | | For Iron Castings | For Steel Castings | |
| 25 | +0.60 -0.15 | 64 | 32 | 32 | 1.0 | 6 | | 12 × 2.5 |
| 26 | | | | | | | | |
| 28 | | | | | | | | |
| 32 | +0.80 -0.20 | 80 | 40 | 40 | 1.5 | 8 | | 13 × 4 |
| 35 | | | | | | | | |
| 38 | | | | | | | | |
| 40 | | | | | | | | |
| 45 | | | | | | | | |
| 50 | | | | | | | | |
| 55 | +1.0 -0.25 | 92 | 46 | 46 | 2.0 | 10 | 12 | — |
| 60 | | | | | | | | |
| 65 | | | | | | | | |
| 70 | | | | | | | | |
| 75 | | | | | | | | |
| 80 | | 100 | 50 | 50 | 2.5 | 12 | 14 | — |
| 85 | | | | | | | | |
| 90 | | | | | | | | |
| 95 | | | | | | | | |
| 100 | | | | | | | | |

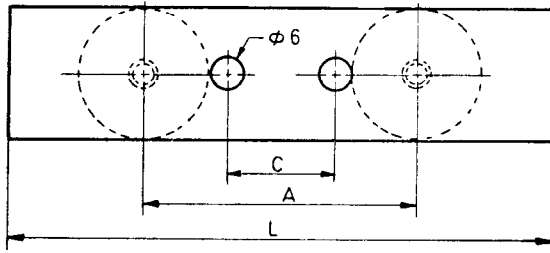
TABLE 6 DIMENSIONS OF TWO COLUMN CHAPLETS

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.

**VARIANT 3**

With Round Head,
Round Column and
Rectangular Bottom
Plate

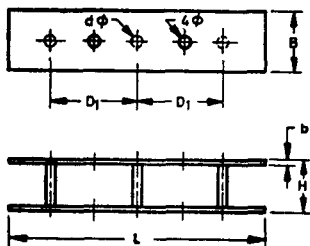


| <i>H</i> | | <i>L</i> | <i>A</i> | <i>B</i> | <i>C</i> | <i>d</i> | <i>d</i> ₁ | <i>b</i> | <i>b</i> ₁ |
|----------|----------------|----------|----------|----------|----------|----------|-----------------------|----------|-----------------------|
| Nominal | Tolerance | | | | | | | | |
| 10 | +0.5 -0.15 | 100 | 50 | 25 | 20 | 4 | 6 | 0.8 | 1 |
| 12 | | | | | | | | | |
| 14 | | | | | | | | | |
| 16 | | | | | | | | | |
| 18 | | | | | | | | | |
| 20 | +0.61 -0.15 | 125 | 75 | 25 | 40 | 5 | 7 | 1 | 1.5 |
| 22 | | | | | | | | | |
| 24 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | +0.8 -0.20 | 150 | 90 | 25 | 50 | 6 | 8 | 1.2 | 2 |
| 40 | | | | | | | | | |
| 40 | | | | | | | | | |
| 50 | | | | | | | | | |

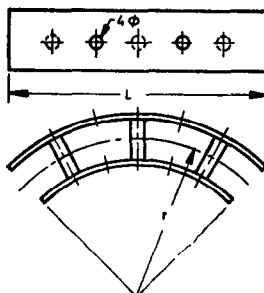
**TABLE 7 DIMENSIONS OF THREE COLUMN CHAPLETS,
TYPE 4, VARIANTS 1 AND 2**

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



VARIANT 1
Flat



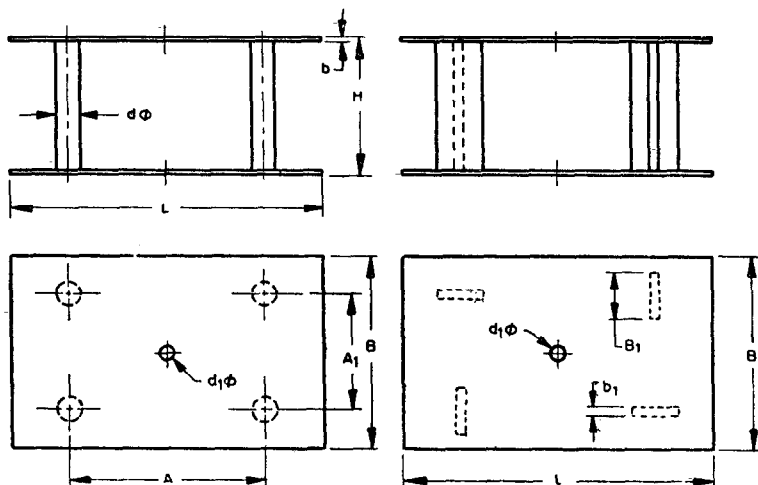
VARIANT 2
Radial

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>d</i> | <i>b</i> | <i>D</i> ₁ |
|----------|-----------------|----------|----------|----------|----------|-----------------------|
| Nominal | Tolerance | | | | | |
| 12 | +0.5 -0.15 | 100 | 25 | 5 | 2 | 35 |
| 14 | | | | | | |
| 15 | | | | | | |
| 18 | | | | | | |
| 20 | +0.6 -0.15 | 125 | 30 | 5 | 2.5 | 40 |
| 22 | | | | | | |
| 24 | | | | | | |
| 25 | | | | | | |
| 26 | + 0.8 - 0.20 | 150 | 35 | 6 | 3 | 50 |
| 28 | | | | | | |
| 30 | | | | | | |
| | | | | | | |

NOTE — For variant 2, r shall be mentioned in the order.

**TABLE 8 DIMENSIONS OF FOUR COLUMN CHAPLETS, TYPE 5,
VARIANTS 1 AND 2**
(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



VARIANT 1
With Round Columns

VARIANT 2
With Rectangular Columns

| H | | L | B | A | A ₁ | d ₁ | b | d | | B ₁ × b ₁ |
|---------|----------------|----|----|----|----------------|----------------|-----|-------------------|--------------------|---------------------------------|
| Nominal | Tolerance | | | | | | | For Iron Castings | For Steel Castings | For Iron Castings |
| 22 | +0.60 -0.15 | 80 | 50 | 50 | 30 | 3 | 1.0 | 6 | | 12 × 2.5 |
| 24 | | | | | | | | | | |
| 25 | | | | | | | | | | |
| 26 | | | | | | | | | | |
| 28 | | | | | | | | | | |
| 30 | | | | | | | | | | |
| 32 | | | | | | | | | | |
| 35 | | | | | | | | | | |

(Continued)

**TABLE 8 DIMENSIONS OF FOUR COLUMN CHAPLETS, TYPE 5,
VARIANTS 1 AND 2 — Contd**

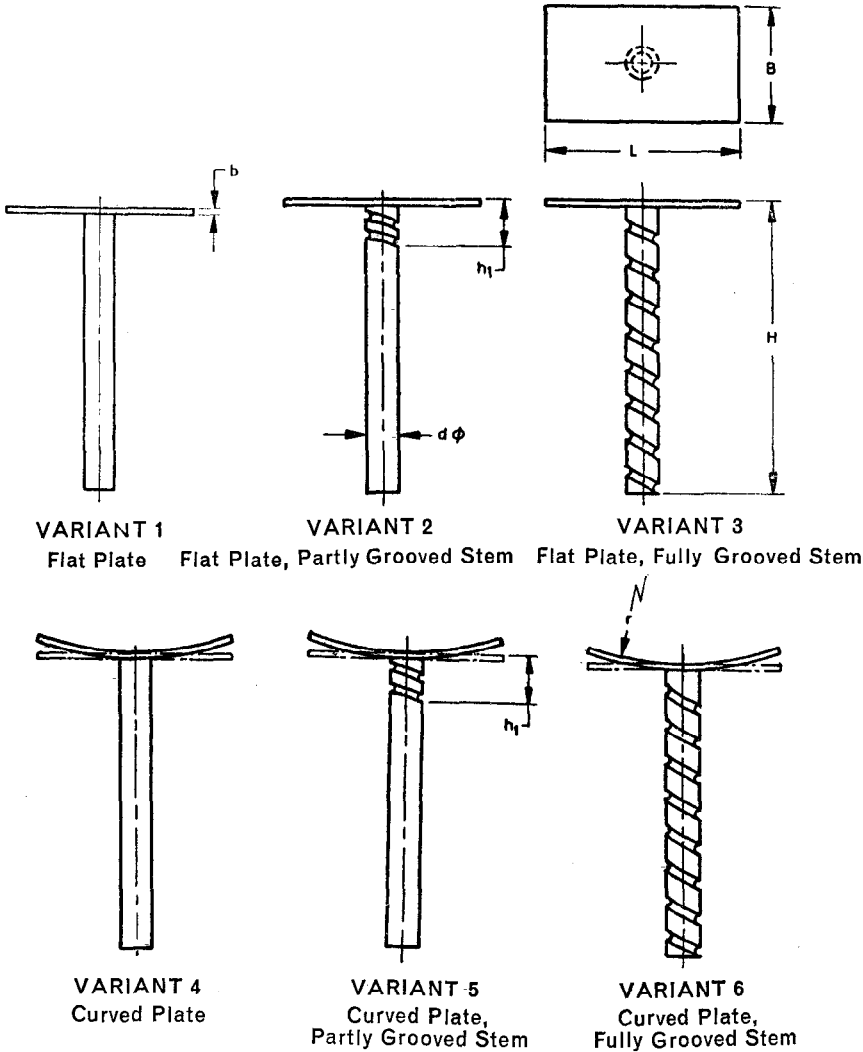
All dimensions in millimetres.

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>A</i> | <i>A</i> ₁ | <i>d</i> ₁ | <i>b</i> | <i>d</i> | | <i>B</i> ₁ × <i>b</i> ₁ |
|----------|----------------|----------|----------|----------|-----------------------|-----------------------|----------|-------------------|--------------------|---|
| Nominal | Tolerance | | | | | | | For Iron Castings | For Steel Castings | For Iron Castings |
| 38 | +0.80 −0.20 | 100 | 60 | 60 | 35 | 3 | 1.5 | 8 | | 13 × 4.0 |
| 40 | | | | | | | | | | |
| 45 | | | | | | | | | | |
| 50 | | | | | | | | | | |
| 55 | +1.0 −0.25 | 120 | 66 | 70 | 40 | 3 | 2.0 | 10 | 12 | — |
| 60 | | | | | | | | | | |
| 65 | | | | | | | | | | |
| 70 | | | | | | | | | | |
| 75 | | 130 | 76 | 80 | 45 | 4 | 2.5 | 12 | 14 | — |
| 80 | | | | | | | | | | |
| 85 | | | | | | | | | | |
| 90 | | | | | | | | | | |
| 95 | +1.5 −0.5 | 140 | 86 | 85 | 55 | 5 | 3.0 | 14 | 18 | — |
| 100 | | | | | | | | | | |
| 115 | | 155 | 96 | 95 | 60 | | | 16 | 22 | — |
| 125 | | | | | | | | | | |
| 130 | | | | | | | | | | |
| 150 | | | | | | | | | | |

**TABLE 9 DIMENSIONS OF STEM CHAPLETS, TYPE 6,
VARIANTS 1, 2, 3, 4, 5 AND 6**

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



Main Dimensions of Stem Chaplets

| H | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
|---------------------------------------|----|-----|-----|------|-----|-----|------|-----|------|-----|------|-----|-----|
| h_1 For Variants 2 and 5 Only | 12 | 15 | 19 | 22.5 | 26 | 30 | 37.5 | 45 | 52.5 | 60 | 67.5 | 75 | 90 |

(Continued)

**TABLE 9 DIMENSIONS OF STEM CHAPLETS, TYPE 6,
VARIANTS 1, 2, 3, 4, 5 AND 6 — Contd**

All dimensions in millimetres.

Other Dimensions of Stem Chaplets, Variants 1 to 6.

| <i>H</i> | <i>d</i> | | <i>b</i> | <i>L</i> | <i>B</i> |
|----------|-------------------|--------------------|----------|----------|----------|
| | For Iron Castings | For Steel Castings | | | |
| 5 | 3 | | 0.5 | 25 | 12 |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | 4 | | 0.75 | 30 | 16 |
| 12 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 18 | 6 | | 1.0 | 44 | 22 |
| 20 | | | | | |
| 22 | | | | | |
| 24 | | | | | |
| 25 | | | | | |
| 26 | 8 | | 1.5 | 50 | 30 |
| 28 | | | | | |
| 30 | | | | | |
| 32 | | | | | |
| 35 | | | | | |
| 38 | 8 | | 1.5 | 50 | 30 |
| 40 | | | | | |
| 45 | | | | | |
| 50 | | | | | |

(Continued)

**TABLE 9 DIMENSIONS OF STEM CHAPLETS, TYPE 6,
VARIANTS 1, 2, 3, 4, 5 AND 6 — Contd**

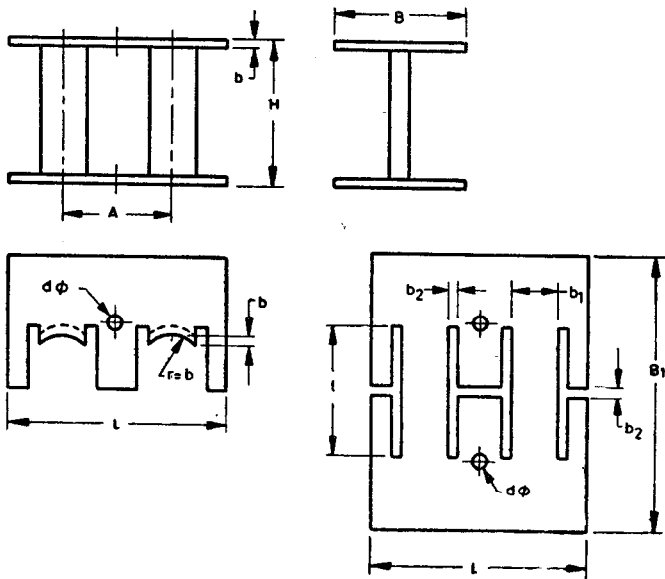
All dimensions in millimetres.

| <i>H</i> | <i>d</i> | | <i>b</i> | <i>L</i> | <i>B</i> |
|----------|-------------------|--------------------|----------|----------|----------|
| | For Iron Castings | For Steel Castings | | | |
| 55 | 10 | 12 | 2.0 | 64 | 32 |
| 60 | | | | | |
| 65 | | | | | |
| 70 | | | | | |
| 75 | | | | | |
| 80 | 12 | 14 | 2.5 | 70 | 36 |
| 85 | | | | | |
| 90 | | | | | |
| 95 | | | | | |
| 100 | | | | | |
| 105 | 14 | 18 | 3.0 | 80 | 40 |
| 110 | | | | | |
| 115 | | | | | |
| 125 | | | | | |
| 130 | | | | | |
| 140 | 16 | 22 | 3.5 | 92 | 46 |
| 150 | | | | | |

NOTE — For variants 4, 5 and 6, *r* shall be mentioned in the order.

TABLE 10 DIMENSIONS OF TWO COLUMN STAMPED CHAPLETS, TYPE 7
(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



| <i>H</i> | | <i>L</i> | <i>B</i> | <i>b</i> | <i>A</i> | <i>B</i> ₁ | <i>l</i> | <i>b</i> ₁ | <i>b</i> ₂ | <i>d</i> |
|----------|----------------|----------|----------|----------|----------|-----------------------|----------|-----------------------|-----------------------|----------|
| Nominal | Tolerance | | | | | | | | | |
| 20 | +0.60 −0.15 | 56 | 18 | 1.5 | 28 | 38 | 18 | 8 | 2.0 | 3.0 |
| 22 | | | 20 | | | 42 | 20 | 9 | | |
| 24 | | | 22 | | | 46 | 22 | 10 | | |
| 25 | | | | | | | | | | |
| 26 | | | 23 | 48 | | 23 | | | | |
| 28 | | | 25 | 52 | | 25 | | | | |
| 30 | | | 27 | 56 | | 27 | | | | |

(Continued)

**TABLE 10 DIMENSIONS OF TWO COLUMN STAMPED CHAPLETS,
TYPE 7 — Contd**

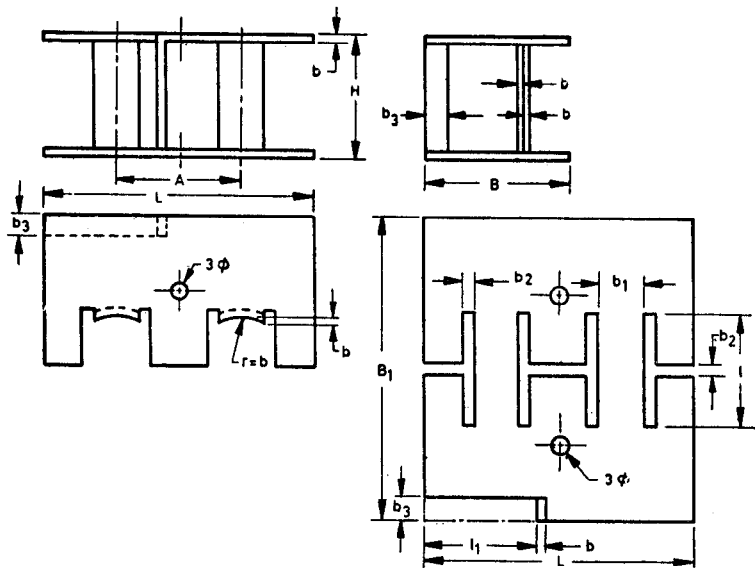
All dimensions in millimetres.

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>b</i> | <i>A</i> | <i>B</i> ₁ | <i>l</i> | <i>b</i> ₁ | <i>b</i> ₂ | <i>d</i> |
|----------|----------------|----------|----------|----------|----------|-----------------------|----------|-----------------------|-----------------------|----------|
| Nominal | Tolerance | | | | | | | | | |
| 32 | +0.80 -0.20 | 56 | 29 | 2.0 | 28 | 60.5 | 28 | 11 | 2.5 | 4.0 |
| 35 | | | 32 | | | 66.5 | 31 | | | |
| 38 | | | 34 | 71.0 | | 34 | 12 | 3.0 | | |
| 40 | | 73 | 36 | 3.0 | 36 | 75.5 | 36 | 14 | 3.5 | 5.0 |
| 45 | | | 40 | | | 83.5 | 41 | 16 | | |
| 50 | | | 45 | 3.5 | | 94.0 | 46 | | 4.0 | |

TABLE 11 DIMENSIONS OF THREE COLUMN STAMPED
CHAPLETS, TYPE 7

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.

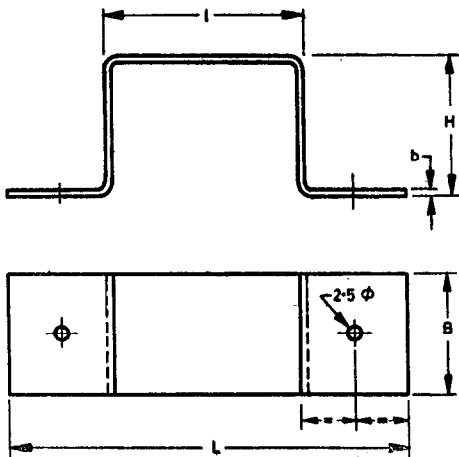


| H | | L | B | b | A | B ₁ | l | l ₁ | b ₁ | b ₂ | b ₃ |
|---------|----------------|----|----|-----|----|----------------|----|----------------|----------------|----------------|----------------|
| Nominal | Tolerance | | | | | | | | | | |
| 8 | +0.30 -0.10 | 28 | 20 | 1.0 | 14 | 42 | 6 | 6 | 4 | 2 | 4 |
| 10 | | | | | | | 8 | 8 | | | |
| 12 | | | | | | | 10 | 10 | | | |
| 14 | +0.50 -0.15 | 36 | 25 | 1.5 | 16 | 52 | 12 | 12 | 5 | 2 | 4 |
| 15 | | | | | | | 13 | 13 | | | |
| 16 | | | | | | | 14 | 14 | | | |
| 18 | | | | | | | 16 | 16 | | | |
| 20 | +0.80 -0.15 | 48 | 26 | | 22 | 54 | 18 | 18 | 7 | | |
| 22 | | | | | | | 20 | 20 | | | |

TABLE 12 DIMENSIONS OF BRIDGE TYPE CHAPLETS, TYPE 8

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



| <i>H</i> | | <i>L</i> | <i>B</i> | <i>l</i> | <i>b</i> |
|----------|----------------|----------|----------|----------|----------|
| Nominal | Tolerance | | | | |
| 3 | +0.20 −0.10 | 50 | 10 | 25 | 0.5 |
| 4 | | | | | |
| 5 | | | | | |
| 6 | +0.30 −0.10 | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 12 | +0.50 −0.10 | | 20 | | |
| 14 | | | | | |
| 15 | | | | | |
| 16 | | | | | |
| 18 | | | | | |
| 20 | | | | | |

(Continued)

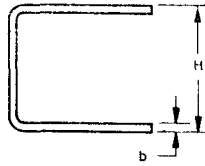
TABLE 12 DIMENSIONS OF BRIDGE TYPE CHAPLETS, TYPE 8 — *Contd*

All dimensions in millimetres.

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>l</i> | <i>b</i> |
|----------|----------------|----------|----------|----------|----------|
| Nominal | Tolerance | | | | |
| 22 | +0.60 -0.15 | 80 | 26 | 40 | 1.0 |
| 24 | | | | | |
| 25 | | | | | |
| 26 | | | | | |
| 28 | | | | | |
| 30 | | | | | |
| 35 | +0.80 -0.20 | 100 | 30 | 50 | 1.5 |
| 40 | | | | | |
| 45 | | | | | |
| 50 | | | | | |

TABLE 13 DIMENSIONS OF SPRING BACK CHAPLET, TYPE 9(*Clauses 4.1 and 4.1.1*)

All dimensions in millimetres.

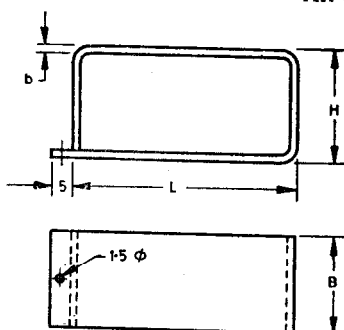


| <i>H</i> | | <i>L</i> | <i>B</i> | <i>b</i> |
|----------|----------------|----------|----------|----------|
| Nominal | Tolerance | | | |
| 5 | +0.20 -0.10 | 10 | 5 | 0.5 |
| 6 | | | | |
| 7 | | | | |
| 8 | +0.30 -0.10 | 15 | 10 | 0.75 |
| 9 | | | | |
| 10 | | | | |
| 12 | +0.50 -0.15 | 25 | 20 | 1.0 |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 18 | | | | |
| 20 | | | | |
| 22 | +0.60 -0.15 | 30 | 26 | 1.5 |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 28 | | | | |
| 30 | | | | |
| 35 | +0.80 -0.20 | 40 | | 2.0 |
| 40 | | | | |
| 45 | | | | |
| 50 | | | | |

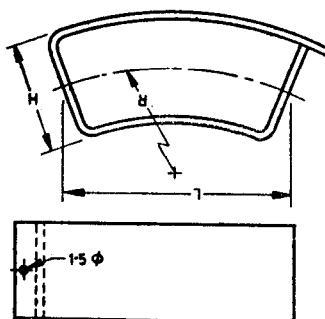
**TABLE 14 DIMENSIONS OF BOX TYPE CHAPLETS, TYPE 10,
VARIANTS 1, 2, 3, 4 AND 5**

(Clauses 4.1 and 4.1.1)

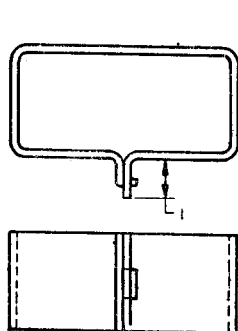
All dimensions in millimetres.



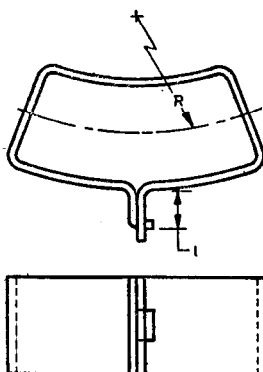
VARIANT 1
Rectangular With Tang



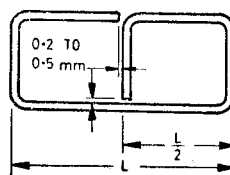
VARIANT 2
Radial With Tang



VARIANT 3
Rectangular With
Inserting End



VARIANT 4
Radial With Inserting End



VARIANT 5
Box Type With Central Rib

| <i>H</i> | | <i>L</i> | <i>B</i> | <i>b</i> |
|----------|----------------|----------|----------|----------|
| Nominal | Tolerance | | | |
| 3 | +0.20 -0.10 | 20 | 12.0 | 0.35 |
| 4 | | | | |
| 5 | | | | |
| 6 | | | 20.0 | 0.5 |

(Continued)

TABLE 14 DIMENSIONS OF BOX TYPE CHAPLETS, TYPE 10,
VARIANTS 1, 2, 3, 4 AND 5 — *Contd*
 All dimensions in millimetres.

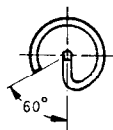
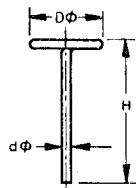
| <i>H</i> | | <i>L</i> | <i>B</i> | <i>b</i> |
|----------|----------------|----------|----------|----------|
| Nominal | Tolerance | | | |
| 7 | +0.30 -0.10 | 25 | 20.0 | 0.5 |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 12 | +0.50 -0.15 | 30 | 26.0 | 0.75 |
| 14 | | | | |
| 15 | | | | |
| 16 | | 40 | | 1.0 |
| 18 | | | | |
| 20 | +0.60 -0.15 | 50 | | 1.2 |
| 22 | | | | |
| 24 | | 60 | | 1.5 |
| 25 | | | | |
| 26 | | | | |
| 28 | | | | |
| 30 | | | | |

NOTE — For variants 2 and 4 *R* shall be mentioned in the order. For variants 3 and 4, *l* shall approximately be 10 mm long.

TABLE 15 DIMENSIONS OF WIRE CHAPLET WITH SINGLE SUPPORTING SPIRAL, TYPE 11, VARIANT 1

(*Clauses 4.1 and 4.1.1*)

All dimensions in millimetres.

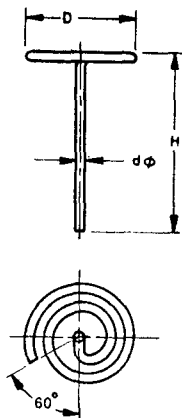


| <i>H</i> | <i>D</i> | <i>d</i> |
|----------|----------|----------|
| 20 | 16 | 1·0 |
| 25 | 18 | 1·2 |
| 25 | 20 | 1·4 |
| 30 | 20 | 1·6 |
| 35 | 20 | 2·0 |
| 40 | 20 | 2·5 |

TABLE 16 DIMENSIONS OF WIRE CHAPLET WITH DOUBLE SUPPORTING SPIRALS, TYPE 11, VARIANT 2

(Clauses 4.1 and 4.1.1)

All dimensions in millimetres.



| H | D | d |
|-----|-----|-----|
| 20 | 20 | 1.0 |
| 25 | 22 | 1.2 |
| 25 | 25 | 1.4 |
| 30 | 25 | 1.6 |
| 35 | 25 | 2.0 |
| 40 | 25 | 2.5 |

6. REQUIREMENTS

6.1 The chaplets shall be given one of the following anti-corrosion treatments/coating:

- a) Passivation,
- b) Copper coating,
- c) Tin coating, and
- d) Nickel coating.

6.2 In case the chaplets are tin coated, the tin used shall conform to Grade Sn 99.75 of IS : 26-1966*.

6.2.1 Hot dip tinning shall be done in accordance with IS : 5274-1969†.

6.2.2 The procedure for other types of anti corrosive treatment shall be as agreed to between the purchaser and the manufacturer.

6.3 The columns of chaplets shall be perpendicular to the supporting surfaces and the deviation from perpendicularity shall not exceed 3 degrees.

6.3.1 The stem and flanges of the chaplets shall be rigidly riveted.

6.4 The purchaser may order for supply of perforated chaplets except in case of type 11. Perforation shall be as agreed to between the purchaser and the manufacturer.

6.5 The pitch of the threads for type 5, variants 2, 3, 5 and 6 shall be mentioned in the order, and the roots of the threads shall have no grease, dirt or rust deposited on them.

7. PACKAGING

7.1 Unless specified otherwise, the material shall be supplied in waterproof packages containing 500 to 1 000 chaplets of particular size and shape.

8. MARKING

8.1 Each container shall be clearly marked with the following information:

- a) Manufacturer's name or trade-mark,
- b) Designation, and
- c) Number of chaplets.

*Specification for tin ingots (*second revision*).

†Recommended practice for hot-dip tinning of plain carbon steel.

8.1.1 The material may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

(Continued from page 2)

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

| Quantity | Unit | Symbol |
|---------------------------|----------|--------|
| Length | metre | m |
| Mass | kilogram | kg |
| Time | second | s |
| Electric current | ampere | A |
| Thermodynamic temperature | kelvin | K |
| Luminous intensity | candela | cd |
| Amount of substance | mole | mol |

Supplementary Units

| Quantity | Unit | Symbol |
|-------------|-----------|--------|
| Plane angle | radian | rad |
| Solid angle | steradian | sr |

Derived Units

| Quantity | Unit | Symbol | Conversion |
|----------------------|---------|--------|---------------------------------|
| Force | newton | N | 1 N = 0.101 972 kgf |
| Energy | joule | J | 1 J = 1 N.m |
| Power | watt | W | 1 W = 1 J/s |
| Flux | weber | Wb | 1 Wb = 1 V.s |
| Flux density | tesla | T | 1 T = 1 Wb/m ² |
| Frequency | hertz | Hz | 1 Hz = 1 c/s (s ⁻¹) |
| Electric conductance | siemens | S | 1 S = 1 A/V |
| Pressure, stress | pascal | Pa | 1 Pa = 1 N/m ² |

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